

WHAT IS CLAIMED IS:

1. A position control device for controlling a controlled axis in accordance with a command movement, comprising:
 - 5 means for calculating the position of the controlled axis on the basis of the command movement for the controlled axis;
 - means for calculating the position of a virtual axis which is assumed to be moving at a speed settled
 - 10 depending on a given function;
 - means for storing the calculated position of the controlled axis in association of the calculated position of the virtual axis; and
 - 15 means for driving the controlled axis in a manner such that the controlled axis synchronously follows the virtual axis as a master axis in accordance with the position stored in said means for calculating the position of the controlled axis.
2. A position control device for controlling a controlled axis in accordance with a command movement, comprising:
 - means for acquiring the state of an I/O signal obtained by an I/O signal control means using a ladder;
 - means for calculating the position of a virtual axis
 - 25 which is assumed to be moving at a speed settled depending on a given function;
 - means for storing the state of the I/O signal obtained by said means for acquiring the state of an I/O signal in association with the position of the virtual axis calculated by said means for calculating the position of a virtual axis; and
 - 30 means for carrying out control of the I/O signal in accordance with the position of the virtual axis, based

on the I/O signal state stored in said means for storing the state of the I/O signal.

3. A position control device for controlling a controlled axis in accordance with a command movement,
5 comprising:

means for calculating the position of the controlled axis on the basis of the command movement for the controlled axis;

- 10 means for acquiring the state of an I/O signal obtained by an I/O signal control means using a ladder;

means for calculating the position of a virtual axis which is assumed to be moving at a speed settled depending on a given function;

- 15 means for storing the position of the controlled axis with respect to the position of the virtual axis and the state of the I/O signal; and

means for carrying out the drive of the controlled axis and control of the I/O signal in a manner such that the controlled axis synchronously follows the 20 virtual axis as a master axis in accordance with the position and the I/O signal state stored in said means for storing the position of the controlled axis and the state of the I/O signal.

4. The position control device according to claim 2 or
25 3, wherein said means for carrying out control of the I/O signal includes exclusive control means for preventing the I/O signal stored in said means for storing the state of the I/O signal and an I/O signal using a ladder from being written doubly.

- 30 5. The position control device according to claim 2 or 3, which further comprises means for selecting the I/O signal to be stored in said means for storing the state of the I/O signal.